



Summary of the '212 patent

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(71) Applicant Name: SK Telecom co., Ltd.
(54) Title of Invention: APPARATUS FOR POWER CONTROLLING BY USING
DIFFERENTIAL VALUE AND METHOD THEREOF

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A base station establishes the closed loop power command ("CLPC") bit on the basis of the signal to noise ratio ("Eb/No") at a base station's receiver, and sends it to a mobile station. Usually, a mobile station adjusts reverse power magnitude by a fixed stepsize, according to the CLPC. However, the CLPC bit may not reflect reverse channel changes due to the delay in the determination and transmission of the CLPC bit through the close loop. For example, in case of a rapidly changing channel, the slope overload noise occurs in power controlling, but in case of a sluggishly changing channel, granular noise occurs.

In order to overcome the above-mentioned problems, the '212 patent provides a method of controlling reverse power by an adaptively determined stepsize in the mobile station. A sequence of CLPC bits is stored, and then a 2nd order differential value is calculated from the sequence. If the 2nd order differential absolute value is high, it means that the stepsize is too big compared with the reverse channel's fluctuation so that the stepsize of controlling reverse power should be reduced. In contrast, if the 2nd order differential absolute value is low, then the stepsize should be increased.

Thus, the invention of the '378 publication improves channel loss compensation without adverse effect from the reverse channel conditions.